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December 14, 2018

Ms. Karen Hubbard
Public Utility Commission of Texas
P.O. Box 13326
Austin, TX 78711-3326

RE: PUC Docket No. 48787: Joint Application of LCRA Transmission Services Corporation and AEP Texas, Inc. to Amend their Certificates of Convenience and Necessity for the Proposed Bakersfield to Solstice 345-kilovolt Transmission Line Project in Pecos County, Texas

Dear Ms. Hubbard:

Texas Parks and Wildlife Department (TPWD) has received the Environmental Assessment (EA) and Alternative Routes Analysis regarding the above-referenced proposed transmission line project. TPWD offers the following comments and recommendations concerning this project.

Please be aware that a written response to a TPWD recommendation or informational comment received by a state governmental agency may be required by state law. For further guidance, see the Texas Parks and Wildlife (TPW) Code, Section 12.0011. For tracking purposes, please refer to TPWD project number 40976 in any return correspondence regarding this project.

Project Description

LCRA Transmission Services Corporation (LCRA TSC) and American Electric Power, Texas Inc. (AEP Texas) propose to build a new double-circuit 345-kilovolt (kV) transmission line in Pecos County. LCRA TSC will construct, own, operate, and maintain the eastern half of the transmission line connecting to LCRA TSC's Bakersfield Station and AEP Texas will construct, own, operate, and maintain the western half of the transmission line connecting to AEP Texas' Solstice Switch Station. The new transmission line will range from approximately 67.8 to 91.7 miles long, depending on the route ultimately selected by the Public Utility Commission of Texas (PUC). The proposed project also involves construction of interconnection facilities at the existing Bakersfield Station and constructing a 345-kV expansion station adjacent to the existing 138-kV Solstice Switch Station.

The transmission line will be installed on new steel lattice tower structures within new easements. The new double-circuit 345-kV transmission facilities will typically be constructed on new right-of-way (ROW) within easements approximately 150 feet in width, and using typical spans that range from approximately 900 to 1,500 feet. In some areas, actual spans could be more or less than the typical estimated spans, depending upon terrain and other engineering

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.texas.gov

constraints. Easement widths could also vary to address similar concerns. Access easements and/or temporary construction easements may be needed in some areas.

Previous Coordination

TPWD provided information and recommendations regarding the preliminary study area for this project to POWER Engineers, Inc. (POWER) on March 9, 2018. This response was included in Appendix A of the EA.

> **Recommendation:** Please review previous TPWD correspondence and consider the recommendations provided, as they remain applicable to the project as proposed.

Proposed Alternative Routes

LCRA TSC/AEP Texas' Recommended Route

POWER, LCRA TSC, and AEP Texas identified a total of 25 primary alternative routes for comparison that utilize all of the alternative route segments at least once and also provide geographic diversity. POWER professionals with expertise in different environmental disciplines (geology/soils, hydrology, terrestrial ecology, wetland ecology, land use/aesthetics, socioeconomics, and cultural resources) and Geographic Information Systems (GIS) evaluated the routes based upon environmental conditions present along each route (augmented by aerial photo interpretation and field reconnaissance) and the general routing criteria developed by LCRA TSC, AEP Texas, and POWER. The evaluation of the routes involved quantifying 46 land use and environmental criteria.

Upon evaluation of the primary alternative routes, LCRA TSC and AEP Texas selected Route 24 as the primary alternative route that the joint applicants believe best addresses the requirements of Public Utility Regulatory Act (PURA) and the PUC's Substantive Rules. The Certificate of Convenience and Necessity (CCN) application included the following information outlining the factors that contributed to their selection of Route 24:

- *Route 24 has the highest percentage paralleling and adjacent to existing corridors (transmission lines, public roads/highways and apparent property boundaries) for approximately 86 percent of its total estimated length (61.5 miles of 71.1 miles);*
- *Route 24 has a significant portion of length parallel and adjacent to an existing transmission line currently being rebuilt from 69-kV to 138-kV which will decrease the amount of new disturbance;*

- *Route 24 has the 4th shortest length (along with Route 4) of the 25 primary alternative routes included in the CCN (approximately 71.1 miles) and is only 3.3 miles longer than the shortest route;*
- *Route 24 has a relatively low cost, as the 4th lowest cost of the 25 primary alternative routes included in the CCN (approximately $155,960,000);*
- *Route 24 has a relatively lower habitable structure count of 5 (habitable structures range from 0 to 14);*
- *Route 24 has a relatively low overall aesthetic impact;*
- *Route 24 crosses two recorded cultural resources sites and has two additional recorded resources sites located within 1,000 feet of the centerline;*
- *Route 24 has only 34 pipeline crossings (pipeline crossings range from 20 to 46).*

TPWD's Recommended Route

To evaluate the potential impacts to fish and wildlife resources, 18 criteria from Table 4-1 in the EA were used. The criterion TPWD used to evaluate potential impacts to fish and wildlife resources included:

- Length of primary alternative route;
- Length of ROW using existing transmission line ROW;
- Length of ROW parallel and adjacent to existing transmission line ROW;
- Length of ROW parallel and adjacent to other existing ROW (roadways, railways, etc.);
- Length of ROW across parks/recreational areas;
- Number of additional parks/recreational areas within 1,000 feet of ROW centerline;
- Length of ROW across University Lands;
- Length of ROW through cropland;
- Length of ROW through pasture/rangeland;
- Length of ROW through upland woodlands/brushland;
- Length of ROW through bottomland/riparian woodlands;
- Length of ROW across National Wetlands Inventory (NWI) mapped wetlands;
- Length of ROW across known habitat of federally-listed endangered or threatened species (as defined in the EA);
- Length of ROW across open water (lakes, ponds);
- Number of stream crossings;
- Number of river crossings;
- Length of ROW parallel (within 100 feet) to streams or rivers;

- Length of ROW across 100-year floodplain.

TPWD typically recommends that transmission line routes be located adjacent to previously disturbed areas such as existing utility or transportation ROWs and discourages fragmenting habitat or locating in areas that could directly negatively impact wildlife, including listed species. After careful evaluation of the 25 routes filed with the CCN application, TPWD selected Route 24 as the route having the least-potential to impact fish and wildlife resources. The decision to recommend Route 24 was based primarily on the following factors:

- Route 24 is the 4th shortest route at 71.1 miles (the shortest route is 67.8 miles);
- Approximately 81 percent of Route 24 is parallel and adjacent to existing transmission line ROW and other existing ROW (roads, railways, etc.);
- Route 24 does not cross any parks and there are no additional parks or recreational areas within 1,000 feet of the ROW centerline;
- Route 24 does not cross any University Lands;
- Route 24 only crosses 0.26 mile of bottomland/riparian woodlands;
- Route 24 does not cross any NWI mapped wetlands;
- Route 24 does not cross any known habitat of federally-listed threatened and endangered species (as defined in the EA);
- Route 24 does not cross any open water (lakes, ponds);
- Route 24 contains the 2nd fewest number of stream crossings at 15 stream crossings (with the least being 13 stream crossings);
- Route 24 does not cross any rivers;
- Only 0.4 mile of Route 24 runs parallel (within 100 feet) to streams or rivers;
- Route 24 does not cross any 100-year floodplain.

TPWD notes that Route 24 would cross six Texas Natural Diversity Database (TXNDD) records. Route 24 crosses two TXNDD records for the kit fox (*Vulpes macrotis*), which is considered a rare species tracked by TPWD. The dates of these two observations range from 1971 to 1979. Route 24 also crosses one TXNDD record for alkali spurge (*Euphorbia astyla*); this plant is also considered to be a rare species tracked by TPWD and the date of this rare plant observation is from 1984. Route 24 crosses one TXNDD record for the Pecos River muskrat (*Ondatra zibethicus ripensis*), also a rare species tracked by TPWD and the last observation date is unknown; however, the observation was transcribed in 1996.

Route 24 would also cross one TXNDD record for the federally- and state-listed threatened Pecos sunflower (*Helianthus paradoxus*) and one TXNDD record for the federally- and state-listed endangered Leon Springs pupfish (*Cyprinodon*

bovinus). Both of these records are located in the vicinity of Leon Creek. The dates of these two observations range from 1974 to 1976. Section 4.1.3.1 (page 4-11) of the EA states, "If surface waters are crossed, the proposed transmission line will span all surface water crossings, with the structure foundations located outside of the ordinary high water lines." Therefore, TPWD does not anticipate direct impacts to Leon Creek from the construction of the proposed transmission line project.

The EA did not provide sufficient information based on surveys (aerial or field), remote sensing, modeling, or other available analysis techniques to determine which route would best minimize impacts to important, rare, and protected species. Therefore, the routing recommendation below is based solely on the natural resource information provided in the CCN application and the EA, as well as publicly available information examined in GIS.

Recommendation: Of the routes evaluated in the EA, Alternative Route 24 appears to best minimize adverse impacts to natural resources while also maintaining a shorter route length and paralleling existing corridors for more than half of the route length. TPWD recommends the PUC select a route that would minimize adverse impacts to natural resources, such as Alternative Route 24.

Construction Recommendations

General Construction Recommendations

Recommendation: TPWD recommends the judicious use and placement of sediment control fence to exclude wildlife from the construction area. In many cases, sediment control fence placement for the purposes of controlling erosion and protecting water quality can be modified minimally to also provide the benefit of excluding wildlife access to construction areas. The exclusion fence should be buried at least six inches and be at least 24 inches high. The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated. Construction personnel should be encouraged to examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact and provide safe egress opportunities prior to initiation of construction activities. TPWD recommends that any open trenches or excavation areas be covered overnight and/or inspected every morning to ensure no wildlife species have been trapped. For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Also, inspect excavation areas for trapped wildlife prior to refilling.

Recommendation: For soil stabilization and/or revegetation of disturbed areas within the proposed project area, TPWD recommends erosion and seed/mulch stabilization materials that avoid entanglement hazards to snakes and other wildlife species. Because the mesh found in many erosion control blankets or mats pose an entanglement hazard to wildlife, TPWD recommends the use of no-till drilling, hydromulching and/or hydroseeding due to a reduced risk to wildlife. If erosion control blankets or mats will be used, the product should contain no netting or contain loosely woven, natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic mesh matting should be avoided.

Federal Law: Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control, except when specifically authorized by the Department of the Interior. This protection applies to most native bird species, including ground nesting species. The U.S. Fish and Wildlife Service (USFWS) Migratory Bird Office can be contacted at (505) 248-7882 for more information on potential impacts to migratory birds.

Section 4.1.4.2 (page 4-15) of the EA states, "Structure design and other mitigation measures can be implemented to minimize the risk for electrocution and/or collisions of birds with overhead powerline facilities. The danger of electrocution to birds as a result of the Proposed Project will be insignificant since the distance between conductors, from conductor to structure, and from conductor to ground wire for the proposed 345-kV transmission line is greater than the wingspan of any bird in the area. The structures and wires of the line could be a collision hazard to birds in flight. Normally, migratory birds fly at altitudes exceeding the tower structure heights proposed for the project and would be at risk only during periods of migratory fallout (inclement weather and/or high opposing direction winds forcing them to lower altitudes)."

Recommendation: To prevent electrocution of perching birds, TPWD recommends utilizing avian-safe designs that provide appropriate separation between two energized phases or between an energized phase and grounded equipment. TPWD recommends covering energized components with appropriate bird protection materials where adequate spacing cannot be achieved, such as installing insulated jumper wires, insulator covers, bushing caps, and arrester caps. TPWD recommends that lines that cross or are located near rivers, creeks, drainages, wetlands, and lakes have line markers

installed at the crossings or closest points to the drainages to reduce potential collisions by birds flying in the vicinity of water features. For additional information, please see the guidelines published in the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* and *Reducing Avian Collisions with Power Lines: The State of the Art in 2012.*

Section 4.1.4.2 (page 4-15) of the EA states, "If ROW clearing occurs during the nesting season, potential impacts could occur within the ROW area related to potential take of migratory bird eggs and/or nestlings. Increases in noise and activity levels during construction could also potentially disturb breeding or other activities of species nesting in areas immediately adjacent to the ROW."

Recommendation: If migratory bird species are found nesting on or adjacent to the project area, they must be dealt with in a manner consistent with the MBTA. TPWD recommends excluding vegetation clearing activities during the general bird nesting season, March 15 through September 15, to avoid adverse impacts to breeding birds. If clearing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends surveying the area proposed for disturbance, as close to the date of construction as possible, to ensure that no nests with eggs or young will be disturbed by operations. TPWD recommends that a 150-foot buffer of vegetation remain around any nests that are observed prior to disturbance. Any vegetation (such as trees, shrubs, and grasses) or other open areas where occupied nests are located should not be disturbed until the eggs have hatched and the young have fledged.

Federal Law: Endangered Species Act

Federally-listed animal species and their habitats are protected from "take" on any property by the Endangered Species Act (ESA). Take of a federally-listed species can be allowed if it is "incidental" to an otherwise lawful activity and must be permitted in accordance with Section 7 or 10 of the ESA. Federally-listed plants are not protected from take except on lands under federal/state jurisdiction or for which a federal/state nexus (i.e., permits or funding) exists. Any take of a federally-listed species or its habitat without the required take permit (or allowance) from the USFWS is a violation of the ESA.

Pecos sunflower (*Helianthus paradoxus*)

Section 2.2.5.4 (page 2-30) of the EA states, "The Pecos sunflower is a federally-listed endangered species that is typically restricted to saline soils of permanently wet desert marshes. This species is only found in Pecos and Reeves counties as well as in five counties in New Mexico and flowers from August to November.

Designated Critical Habitat for this species, if found within the study area, was previously identified along Leon Creek. TXNDD (2018) data identified six occurrences of this species within moist habitats in the study area. This species may occur within the study area where suitable habitat is found."

Recommendation: TPWD recommends the PUC-selected route be surveyed for the Pecos sunflower where suitable habitat may be present, prior to construction. The survey should be performed by a qualified biologist at the time of year when the species is most likely to be found, usually during the species flowering period. If this species is present, plans should be made to avoid adverse impacts to the greatest extent possible. If plants are found in the path of construction, including the placement of staging areas and other project related sites, this office should be contacted for further coordination and possible salvage of plants and/or seeds for seed banking. Plants not in the direct path of construction should be protected by markers or fencing and by instructing construction crews to avoid any harm. The USFWS should be contacted for species occurrence data, guidance, permitting, survey protocols, and mitigation for this federally-listed plant.

Pecos gambusia (*Gambusia nobilis*)

Section 2.2.5.4 (page 2-35) of the EA ,states, "The Pecos gambusia is a small species of fish endemic to spring-fed pools and marshes with constant temperature in west Texas and southeast New Mexico. In Texas, this species is found in Jeff Davis and Pecos counties, with the only known locations in aquatic habitats near the City of Balmorhea, Texas and within Leon Creek and Diamond Y Spring outflow north of the City of Fort Stockton. TXNDD (2018) data identified an occurrence of this species at this location. These habitats were mapped using GIS and avoided during the routing process. This species may occur within the study area along Diamond Y Springs and Leon Creek where suitable habitat is found."

Diamond tryonia (*Tryonia adamantina*)

Section 2.2.5.4 (pages 2-35 and 2-36)) of the EA states, "The Diamond tryonia is a small species of aquatic mollusk endemic to Pecos County. This species is only known to occur at Diamond Y Spring and Leon Creek, north of the City of Fort Stockton. TXNDD (2018) data identified an occurrence of this species at this location. USFWS Critical Habitat has been designated at these locations. These habitats were mapped using GIS and avoided during the routing process. This species occurs in mud substrates on the margins of springs and in flowing water of marshes associated with sedges and cattails. This species may occur within the study area along Diamond Y Springs and Leon Creek where suitable habitat is found."

Leon Springs pupfish (*Cyprinodon bovinus*)

Section 2.2.5.4 (page 2-35) of the EA states, "The Leon Springs pupfish is a small species of fish endemic to natural spring-fed slow-flowing water, marshes, and pools in Pecos County. This species is only known to occur at Diamond Y Spring and Leon Creek, north of the City of Fort Stockton. TXNDD (2018) data identified three occurrences of this species at this location. USFWS Critical Habitat has been designated at these locations. These habitats were mapped using GIS and avoided during the routing process. This species is typically found on the margins of spring-fed marsh pools, away from vegetation. This species may occur within the study area along Diamond Y Springs and Leon Creek where suitable habitat is found."

Gonzales tryonia (*Tryonia circumstriata*)

Section 2.2.5.4 (page 2-36) of the EA states, "The Gonzales tryonia is a small species of aquatic mollusk endemic to Pecos County. This species is only known to occur at Diamond Y Spring and Leon Creek, north of the City of Fort Stockton. TXNDD (2018) data identified an occurrence of this species at this location. USFWS Critical Habitat has been designated at these locations. These habitats were mapped using GIS and avoided during the routing process. This species occurs in mud substrates on the margins of springs and in flowing water of marshes associated with sedges and cattails. This speciesmay occur within the study area along Diamond Y Springs and Leon Creek where suitable habitat is found."

Pecos assiminea snail (*Assiminea pecos*)

Section 2.2.5.4 (page 2-36) of the EA states, "The Pecos assiminea snail is a small species of semi-aquatic snail endemic to the Pecos River Valley of New Mexico and Texas. This species is now known only to occur at Diamond Y Spring and Leon Creek, north of the City of Fort Stockton. TXNDD (2018) data identified an occurrence of this species at this location. USFWS Critical Habitat has been designated at these locations. These habitats were mapped using GIS and avoided during the routing process. This species is typically found on moist ground or beneath emergent vegetation near slow moving water. This species may occur within the study area along Diamond Y Springs and Leon Creek where suitable habitat is found."

Pecos amphipod (*Gammarus pecos*)

Section 2.2.5.4 (page 2-34) of the EA states, "The Pecos amphipod is a small species of aquatic amphipod endemic to two locations in Pecos County, Texas. This species is only known to occur at Diamond Y Spring and Leon Creek, north of the City of Fort Stockton. USFWS Critical Habitat has been designated at these locations. These habitats were mapped using GIS and avoided during the routing process. This species may occur within the study area along Diamond Y Springs and Leon Creek where suitable habitat is found."

Recommendation: TPWD recommends taking measures to avoid impacts to aquatic and riparian habitats (specifically Leon Creek), which would help minimize impacts to the above-listed federally-protected aquatic species (as well as other aquatic species that may inhabit the project area). All waterways in the project area should be spanned, and care should be taken to avoid multiple crossings of creeks and rivers or installing lines parallel to waterways and therefore removing large sections of riparian habitat. River and creek crossings should be located in previously disturbed areas to avoid further fragmentation of the riparian corridors associated with these waterways. TPWD also recommends implementing best management practices (BMPs) to prevent erosion and sedimentation into waterways. Erosion and sediment control measures include temporary or permanent seeding (with native plants), mulching, earth dikes, silt fences, sediment traps, and sediment basins. Examples of post-construction BMPs include vegetation systems (biofilters) such as grass filter strips and vegetated swales as well as retention basins capable of treating any additional runoff. Please also refer to the *General Construction Recommendations* section of this letter for erosion and seed/mulch stabilization materials TPWD recommends utilizing and avoiding. The USFWS should be contacted for species occurrence data, guidance, permitting, survey protocols, and mitigation for these federally-listed aquatic species.

State Law: Parks and Wildlife Code – Chapter 64, Birds

TPW Code Section 64.002, regarding protection of nongame birds, provides that no person may catch, kill, injure, pursue, or possess a bird that is not a game bird. TPW Code Section 64.003, regarding destroying nests or eggs, provides that, no person may destroy or take the nests, eggs, or young and any wild game bird, wild bird, or wild fowl. TPW Code Chapter 64 does not allow for incidental take and therefore is more restrictive than the MBTA.

Recommendation: Please review the *Federal Law: Migratory Bird Treaty Act* section above for recommendations as they are also applicable for Chapter 64 of the Parks and Wildlife Code compliance.

State Law: Parks and Wildlife Code – Section 68.015

Section 68.015 of the TPW Code regulates state-listed species. Please note that there is no provision for the capture, trap, take, or kill (incidental or otherwise) of state-listed species. *TPWD Guidelines for Protection of State-Listed Species* includes a list of penalties for take of species. State-listed species may only be handled by persons with authorization obtained through TPWD. For more information on this permit, please contact the Wildlife Permits Office at (512) 389-4647.

Texas horned lizard (*Phrynosoma cornutum*)

As stated in Section 2.2.5.4 (page 2-38) of the EA, "The Texas horned lizard population has decreased due to collection, land use conversions, habitat loss, and increased fire ant populations. The Texas horned lizard inhabits a variety of habitats including open desert, grasslands, and shrubland in arid and semiarid habitats that contain bunch grasses, cacti, and yucca on soils varying from pure sands and sandy loams to coarse gravels, conglomerates, and desert pavements. Their primary prey item is the harvester ant (*Pogonomyrmex* spp.), but they may also consume grasshoppers, beetles, and grubs. The Texas horned lizard thermo-regulates by basking or burrowing into the soil and is active (not hibernating) between early spring to late summer. This species may occur within the study area where suitable habitat is available."

Recommendation: TPWD recommends having a permitted biologist survey the PUC-selected route for any Texas horned lizards that may be in the area that is proposed for disturbance. As previously mentioned, a useful indication that the Texas horned lizard may occupy the site is the presence of harvester ant nests. The survey should be performed during the warm months of the year when the Texas horned lizards are active. If Texas horned lizards are found on-site, TPWD recommends relocating individuals off-site to a nearby area and that contains similar habitat. For projects where the disturbance is linear (county and state roads and highways, pipelines, and transmission lines) and after Texas horned lizard removal, TPWD recommends that fencing be installed to exclude Texas horned lizards and other reptiles from entering the active construction area and project specific locations or staging areas.

The exclusion fence should be constructed and maintained as follows:

a. The exclusion fence should be constructed with metal flashing or drift fence material.
b. Rolled erosion control mesh material should not be used.
c. The exclusion fence should be buried at least 6 inches deep and be at least 24 inches high.
d. The exclusion fence should be maintained for the life of the project and only removed after the construction is completed and the disturbed site has been revegetated.
e. Any open trenches or excavation areas should be covered overnight and/or inspected every morning to ensure no Texas horned lizards or other wildlife have been trapped. For open trenches and excavated pits, install escape ramps at an angle of less than 45 degrees (1:1) in areas left uncovered. Also, inspect excavation areas for trapped wildlife prior to refilling.

Recommendation: If the PUC-selected route cannot avoid suitable habitat of the Texas horned lizard, then TPWD recommends a permitted biological monitor be present during clearing and construction activities to relocate Texas horned lizards encountered during construction. TPWD also recommends providing contractor training where feasible. Because the biological monitor cannot oversee all construction activity at the same time, it's important for the contractor to be able to identify protected species and to be on the lookout for them during construction. TPWD also recommends avoiding impacts to harvester ant mounds where feasible. TPWD understands that ant mounds in the direct path of construction would be difficult to avoid, but contractors should be mindful of these areas when deciding where to place project specific locations and other disturbances associated with construction.

Recommendation: If the presence of a biological monitor during construction is not feasible, state-listed species observed during construction should be allowed to safely leave the site or be relocated by a permitted individual to a nearby area with similar habitat that would not be disturbed during construction. TPWD recommends that any translocations of reptiles be the minimum distance possible no greater than one mile, preferably within 100 to 200 yards from the initial encounter location. A mixture of cover, food sources, and open ground is important to the Texas horned lizard and the harvester ant. Disturbed areas within suitable habitat for the Texas horned lizard should be re-vegetated with site-specific native, patchy vegetation rather than sod-forming grasses.

Black Bear (*Ursus americanus*)

As stated in Section 2.2.5.4 (page 2-39) of the EA, "The American black bear historically inhabited various habitats throughout Texas and was once thought to be extirpated from the state. In recent years sightings have increased near the Chisos Mountains in west Texas and the Texas Panhandle from bears dispersing from rugged terrain in Mexico and New Mexico. This species may occur within the study area where suitable habitat is found."

Recommendation: TPWD recommends avoiding mesic hardwood forests and long tracts of intact forested land when constructing the proposed project. TPWD also recommends avoiding disturbance of food sources for the black bear such as mast producing trees, prickly-pear fruits, and hearts of Spanish dagger, sotol, and yucca. If a Black bear is observed during field reconnaissance, windshield surveys, or construction, TPWD recommends reporting the black bear sighting to TPWD mammalogist Jonah Evans at (830) 249-2131.

Trans-Pecos black-headed snake (*Tantilla cucullata*)

As stated in Section 2.2.5.4 (page 2-38) of the EA, "The Trans-Pecos black-headed snake habitat may occur on steep and rocky substrates in mesquite-creosote or pinyon-juniper-oak habitats of west Texas. This species is mostly nocturnal and lays its eggs between June and August. TXNDD (2018) data identified an occurrence of this species in the eastern half of the study area. This species may occur within the study area where suitable habitat is available."

Recommendation: Snakes are generally perceived as a threat and killed when encountered during clearing or construction. Therefore, TPWD recommends that personnel involved in clearing and construction be informed of the potential for the Trans-Pecos black-headed snake to occur in the project area. Personnel should be advised to avoid impacts to this snake as it is non-venomous and poses no threat to humans. TPWD recommends a permitted biological monitor be present during construction to try to relocate protected species if found (to an area that is nearby with similar habitat). TPWD recommends that any translocations of reptiles be the minimum distance possible no greater than one mile, preferably within 100 to 200 yards from the initial encounter location. If the presence of a permitted biological monitor during construction is not feasible, state-listed species observed during construction should be allowed to safely leave the site.

Rare Species

In addition to state- and federally-protected species, TPWD tracks special features, natural communities, and rare species that are not listed as threatened or endangered. These species and communities are tracked in the TXNDD, and TPWD actively promotes their conservation. TPWD considers it important to evaluate and, if necessary, minimize impacts to rare species and their habitat to reduce the likelihood of endangerment and preclude the need to list as threatened or endangered in the future.

TPWD notes that the EA did not include information on rare plants that may be present within the study area or potentially impacted by the proposed project.

There are TXNDD record(s) for the following rare plants located within the study area:

- Bigelow's desert grass *(Blepharidachne bigelovii)*
- Cienega false clappia-bush *(Pseudoclappia arenaria)*
- Wright's trumpets *(Acleisanthes wrightii)*
- Alkali spurge *(Chamaesyce astyla)*
- Bushy wild-buckwheat *(Eriogonum suffruticosum)*
- Correll's green pitaya *(Echinocereus viridiflorus var correllii)*
- Havard trumpets *(Acleisanthes acutifolia)*
- Tharp's blue-star (*Amsonia tharpii)*
- Leafy rock-daisy *(Perityle rupestris var. rupestris)*
- Longstalk heimia *(Nesaea longipes)*
- Grayleaf rock-daisy (*Perityle cinerea*)
- White column cactus (*Escobaria albicolumnaria*)
- Leoncita false foxglove *(Agalinis calycina)*
- Rayless rock-daisy *(Perityle angustifolia)*
- Wright's water-willow *(Justicia wrightii)*

Recommendation: TPWD recommends reviewing the TPWD Rare, Threatened, and Endangered Species of Texas by County List (TPWD county list) for Pecos County, as rare plant species in addition to those listed above could be present, depending upon habitat availability. TPWD recommends surveying the PUC-selected route for the above-listed species (or any rare plants that may potentially be impacted by the proposed project) where suitable habitat may be present, prior to construction. The survey should be performed by a qualified biologist at the time of year when the species is most likely to be found, usually during their respective flowering period. If any rare plant species are present, plans should be made to avoid adverse impacts to

the greatest extent possible. If plants are found in the path of construction, including the placement of staging areas and other project related sites, this office should be contacted for further coordination and possible salvage of plants and/or seeds for seed banking. Plants not in the direct path of construction should be protected by markers or fencing and by instructing construction crews to avoid any harm.

Black-tailed prairie dog (*Cynomys ludovicianus*)

Table 2-6 in the EA lists the black-tailed prairie dog as a mammalian species potentially occurring within the study area. Black-tailed prairie dogs inhabit dry, flat, short grasslands with low, relatively sparse vegetation, including areas overgrazed by cattle. The black-tailed prairie dog is a keystone species that provides food and/or shelter for rare species tracked by TPWD such as the ferruginous hawk and the western burrowing owl, as well as many other wildlife species.

Recommendation: TPWD recommends surveying the PUC-selected route for prairie dog towns or burrows and species that depend on them. If prairie dog towns or burrows are found in the area proposed for disturbance, TPWD recommends avoiding these areas during construction and installing exclusion fence to keep prairie dogs from entering the project area. If prairie dog burrows will be disturbed as a result of the proposed project, TPWD recommends non-harmful exclusion methods be used to encourage the animals to vacate the area prior to disturbance and discourage them from returning to the area during construction. If prairie dogs are encountered on the project site, TPWD recommends contacting a prairie dog relocation specialist. If impacting a portion of a larger colony, time relocation efforts and/or humane removal immediately before construction to discourage recolonization of the project area. Prairie dogs can be encouraged to move away from a project area by mowing overgrown adjacent areas. Conversely, prairie dogs can be discouraged from utilizing areas by not mowing and allowing grass or other tall vegetation to grow or by scraping all vegetation off the project site and leaving soil exposed.

Western burrowing owl (*Athene cunicularia hypugaea*)

Table 2-5 in the EA lists the western burrowing owl as a bird species potentially occurring within the study area. The western burrowing owl is a ground-dwelling owl that uses the burrows of prairie dogs and other fossorial animals for nesting and roosting. When natural burrows are limited, this species will breed in urban habitats which may lead to problems for the owls or their young. The owls opportunistically live and nest in road and railway ROWs, parking lots, baseball

fields, school yards, golf courses, and airports. They have also been found nesting on campuses, in storm drains, drainage pipes, and cement culverts, on banks, along irrigation canals, under asphalt or wood debris piles, or openings under concrete pilings or asphalt. The burrowing owl is protected under the MBTA, and take of these birds, their nests, and eggs is prohibited. Potential impacts to the burrowing owl could include habitat removal as well as displacement and/or destruction of nests and eggs if ground disturbance occurs during the breeding season.

> **Recommendation:** As previously mentioned, TPWD recommends surveying the PUC-selected route for prairie dog or other mammal burrows prior to construction. If mammal burrows or other suitable habitat would be disturbed as a result of the proposed project, TPWD recommends they be surveyed for burrowing owls. If nesting owls are found, disturbance should be avoided until the eggs have hatched and the young have fledged.

Cave myotis bat (*Myotis velifer*)

Table 2-6 in the EA lists the cave myotis bat as a mammalian species potentially occurring within the study area.

Adverse impacts, such as habitat loss, to bats are being compounded due to a deadly disease known as white-nose syndrome (WNS). This disease is associated with the fungus, *Pseudogymnoascus destructans*, which appears to impact certain species of hibernating bats and frequently results in death of the infected bats. This fungus has wiped out entire colonies of hibernating bats in states east of Texas. As of April 2018, the fungus that causes WNS has been detected in ten Texas Counties. Bats appear to spread WNS among colonies and roosts; however there is evidence that humans can transport the fungus on their shoes, gear, and clothing after entering infected bat caves and roosts. TPWD is concerned that WNS could be spread by personnel or consultants working on development projects in states where WNS has been detected, and then inadvertently bring the fungus to Texas on gear or clothing that has not been properly decontaminated.

To determine the appropriate BMP to avoid or minimize impacts to bats, review the habitat description for the cave myotis bat on the TPWD county list or other trusted resources. All bat surveys and other activities that include direct contact with bats shall comply with TPWD-recommended white-nose syndrome protocols located on the TPWD Wildlife Habitat Assessment Program website under "Project Design and Construction".

The following survey and exclusion protocols should be followed prior to commencement of construction activities. For the purposes of this letter, structures

are defined as bridges, culverts (concrete or metal), wells, and buildings. For activities that have the potential to impact structures, cliffs or caves, or trees; a qualified biologist should perform a habitat assessment and occupancy survey of the feature(s) with roost potential as early in the planning process as possible or within one year before construction is scheduled to begin.

Recommendation: TPWD recommends surveying the PUC-selected route for potential bat habitat. Surveys should be conducted by a qualified biologist to determine roost site potential and occupancy. Bat surveys of structures/features should include visual inspections for the presence of bats. If bats are present or recent signs of occupation (i.e., piles of guano, distinct musky odor, or staining and rub marks at potential entry points) are observed, take appropriate measures to ensure that bats are not harmed, such as implementing non-lethal exclusion activities or timing or phasing of construction. For roosts where occupancy is strongly suspected but unconfirmed during the initial survey, revisit feature(s) at most four weeks prior to scheduled disturbance to confirm absence of bats.

Recommendation: For exclusion of bats, TPWD recommends locating and sealing the entrances through which bats make ingress/egress. Before excluding bats from any occupied structure/feature, bat species, weather, temperature, season, and geographic location must be incorporated into any exclusion plans to avoid unnecessary harm or death to bats. Winter exclusion must entail a survey to confirm either, 1) bats are absent or 2) present but active (i.e. continuously active – not intermittently active due to arousals from hibernation). Prior to exclusion, ensure that alternate roosting habitat is available in the immediate area. If no suitable roosting habitat is available, install alternate roosts to mitigate for the loss of an occupied roost. If alternate roost sites are not provided, bats may seek shelter in other inappropriate sites, such as buildings, in the surrounding area.

Exclusion devices can be installed by a qualified individual between September 1 and March 31. Exclusion devices should be used for a minimum of seven days when minimum nighttime temperatures are above 50°F and minimum daytime temperatures are above 70°F. TPWD offers the following best-practices regarding bat exclusion devices and activities:

- Avoid using materials that degrade quickly, like paper, steel wool or rags, to close holes.
- Avoid using products or making structural modifications that may block natural ventilation, like hanging plastic sheeting over an active roost entrance, thereby altering roost microclimate.

- Avoid using chemical and ultrasonic repellents.
- Avoid use of silicone, polyurethane or similar non-water-based caulk products.
- Avoid use of expandable foam products at occupied sites
- Avoid the use of flexible netting attached with duct tape.
- In order to avoid entombing bats, exclusion activities should be only implemented by a qualified individual. A qualified individual or company should possess at least the following minimum qualifications:
    - Experience in bat exclusion (the individual, not just the company).
    - Proof of rabies pre-exposure vaccinations.
    - Demonstrated knowledge of the relevant bat species, including maternity season date range and habitat requirements.
    - Demonstrated knowledge of rabies and histoplasmosis in relation to bat roosts.
- Contact TPWD for additional resources and information to assist in executing successful bat exclusions that will avoid unnecessary harm or death in bats.

Western spotted skunk *(Spilogale gracilis)*

Table 2-6 in the EA lists the western spotted skunk as a mammalian species potentially occurring within the study area. The western spotted skunk can be found in open fields, prairies, croplands, fence rows, forest edges, and woodlands.

Western hog-nosed skunk (*Conepatus leuconotus*)

Table 2-6 in the EA lists the western hog-nosed skunk as a mammalian species potentially occurring within the study area. The western hog-nosed skunk inhabits a wide variety of habitats within its range, including woodlands, grasslands, deserts, brushy areas, and rocky canyons in mountainous regions. Dens are in rock crevices, hollow logs, underground burrows, caves, mine shafts, woodrat houses, or under buildings.

Kit fox (*Vulpes macrotis*)

Table 2-6 in the EA lists the kit fox as a mammalian species potentially occurring within the study area. This species primarily inhabits open desert, shrubby or shrub-grass habitat.

Pecos River muskrat (*Ondatra zibethicus ripensis*)

Table 2-6 in the EA lists the Pecos River muskrat as a mammalian species potentially occurring within the study area. This species is found near creeks, rivers, lakes, drainage ditches, and canals and prefers shallow, fresh water with clumps of marshy vegetation, such as cattails, bulrushes, and sedges.

> **Recommendation:** If any of the above-listed rare mammal species are encountered during construction, TPWD recommends that precautions be taken to avoid impacts to them.

Texas Natural Diversity Database

The TXNDD is intended to assist users in avoiding harm to rare species or significant ecological features. Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Absence of information in the database does not imply that a species is absent from that area. Although it is based on the best data available to TPWD regarding rare species, the data from the TXNDD do not provide a definitive statement as to the presence, absence or condition of special species, natural communities, or other significant features within your project area. These data are not inclusive and **cannot be used as presence/absence data**. They represent species that could potentially be in your project area. This information cannot be substituted for field surveys. The TXNDD is updated continuously based on new, updated and undigitized records; therefore, TPWD recommends requesting the most recent TXNDD data on a regular basis. For questions regarding a record or to request the most recent data, please contact TexasNatural.DiversityDatabase@tpwd.texas.gov.

> **Recommendation:** To aid in the scientific knowledge of a species' status and current range, TPWD encourages reporting all encounters of rare, state-listed, and federally-listed species to the TXNDD according to the data submittal instructions found on the TXNDD website.

I appreciate the opportunity to review and comment on this EA. Please contact me at (512) 389-8054 or Jessica.Schmerler@tpwd.texas.gov if you have any questions.

Sincerely,

Jessica E. Schmerler

Jessica E. Schmerler

Wildlife Habitat Assessment Program
Wildlife Division

JES:jn.40976

cc: Ms. Sonya Strambler
Regulatory Case Manager
Lower Colorado River Authority
P.O. Box 220, MS DSC-D140
Austin, TX 78767

Mr. Randy Roper
Regulatory Case Manager
AEP Texas, Inc.
400 W. 15111 Street, Suite 1500
Austin, TX 78701